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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/537,274	03/29/2000	Larry Eugene Mosley	884.240US1	7167

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EXAMINER

THOMAS, ERIC W

ART UNIT PAPER NUMBER

2831

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/537,274

Applicant(s)

MOSLEY, LARRY EUGENE

Examiner

Eric W Thomas

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-7 and 9-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,3,6,7 and 9-21 is/are allowed.
- 6) ☒ Claim(s) 4-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**Introduction:**

The examiner acknowledges, as recommended in the M.P.E.P., the applicant's submission of the amendment dated 6/17/03. At this point, claim 21 has been amended. Thus, claims 2-7, 9-21 are pending in the instant application.

***Continued Examination Under 37 CFR 1.114***

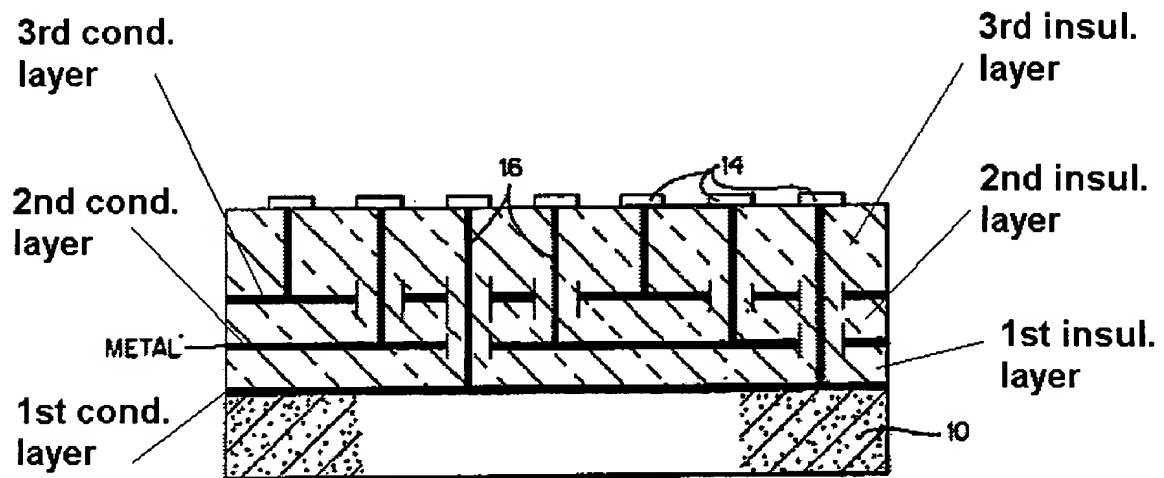
1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 6/17/03 has been entered.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4-5, are rejected under 35 U.S.C. 103(a) as being unpatentable over IBM Technical disclosure bulletin (Cross-reference 0018-8689-20-8-3117 – Referred as '3117).



'3117 discloses a multi layer integrated circuit capacitor comprising: a substrate (10); a first conductive layer located over and contacting the substrate (see above); a first insulator layer located over and contacting the first conductive layer, the first insulator layer not contacting the substrate; a second conductive layer located over the first insulator layer; a second insulator layer located over the second conductive layer; a third conductive layer located over the second insulator layer; a third insulator layer located over the third conductor layer; and a plurality of conductive vias (16) downwardly extending through the third insulator layer to provide electrical interconnection to the first, second and third conductive layers.

'3117 discloses the claimed invention except for the insulator layers are formed from a BaSrTiO<sub>3</sub> material. It is well known in the capacitor art to form insulating layers from a BaSrTiO<sub>3</sub> material (excellent dielectric properties). It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the dielectric from a BaSrTiO<sub>3</sub>, since such a modification would provide the capacitor with a

Art Unit: 2831

dielectric material that has very high dielectric constant; and it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 5, '3117 discloses the claimed invention except for the conductive layers being formed from copper. It is well known in the capacitor art to form conductive layers (electrodes) from a copper material (excellent conductive properties). It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the conductive layers from a copper material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

### ***Response to Arguments***

4. Applicant's arguments, see pages 9-10, filed 6/17/03, with respect to claims 2-3, 19-21 have been fully considered and are persuasive. The rejections of claims 2-3, 19, and 21 have been withdrawn.

5. Applicant's arguments filed 6/17/03 have been fully considered but they are not persuasive.

The arguments regarding claims 4-5 filed on 6/17/03 have been addressed in the action dated 4/16/03. It is noted that 5,679,980; 5,793,057; 5,811,851; 5,781,404;

5729,054; & 5,696,018 were cited to show that SBT is a known dielectric layer having a high dielectric constant.

***Allowable Subject Matter***

6. Claims 2-3, 6-7, 9-18, and 19-21 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or fairly suggest (taken in combination with the other claimed features) a capacitor comprising a first insulator layer located over and contacting the first conductive layer, the first insulator layer not contacting the substrate; and a plurality of controlled collapse chip connection (C4) lands fabricated on and contacting the third insulator layer and in electrical contact with the plurality of conductive vias (claims 2-3, 21); and a capacitor comprising a first insulator layer located over and contacting the first conductive layer, the first insulator layer not contacting the substrate; and a plurality of conductive vias extending downwardly extending through the substrate to provide electrical interconnection to both a top surface and a bottom surface of the integrated circuit capacitor (claims 19-20).

***Conclusion***

8. This is a *continuation* of applicant's earlier Application No. 09/537,274. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

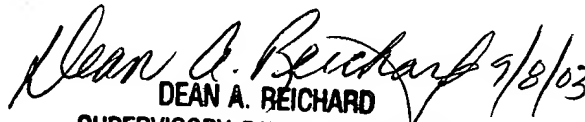
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W Thomas whose telephone number is (703) 305-0878. The examiner can normally be reached on Mon & Sat 9:00AM - 9:30PM; Tues-Fri 5:30PM-10:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 703-308-3682. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ewt

  
DEAN A. REICHARD  
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